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Pulmonary effects and disposition of luteolin and *Artemisia afra* extracts in isolated perfused lungs

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Abstract

Ethnopharmacological relevance: *Artemisia afra* (Asteraceae) is a traditional medicinal plant frequently used in steam inhalation form to treat respiratory conditions.

Aim of the study: Quantify luteolin content in *A. afra* dried crude and aqueous extract. Evaluate the pulmonary effects of *A. afra* steam inhalation, nebulised *A. afra* extract and luteolin in isolated perfused lungs (IPL). Evaluate the pulmonary disposition of intravenously administered luteolin.

Materials and methods: HPLC was used to quantify luteolin in *A. afra* extracts. A modified version of the IPL was used to determine the effects of *A. afra* steam inhalation, nebulised luteolin, and nebulised aqueous leaf extract on lung function, as well as the pulmonary disposition of IV luteolin.

Results: *A. afra* extract contained significantly higher luteolin levels than the crude dried leaves. Inhaled *A. afra* steam, and nebulised luteolin, and *A. afra* extract and IV luteolin produced significant dose-dependent improvements in lung function, with nebulised *A. afra* producing the